

among which we may usually find all stages of development represented. There is also usually a quantity of a white powdery secretion mixed with clear drops of fluid.

POPULUS NIGRA, L.—At the manse of Birnie, near Elgin, I picked up under the trees, in September, two examples of the gall of another species of Aphis—viz., *Pemphigus bursarius*, L. They occur singly on the petioles of the leaves as green, irregularly conical outgrowths ($\frac{1}{3}$ - $\frac{1}{2} \times \frac{1}{5}$ - $\frac{1}{3}$ inch), with naked surface, wrinkled longitudinally. The walls are fleshy or leathery, and enclose a single cavity, which opens by an irregular fissure at the apex of the cone.

On the same leaves were patches of *Erincum populinum*, Pers., galls of *Phytoptus* already indicated ('Scot. Nat.,' ii. 254 (*d*)), as found on *Populus tremula*.

NEW AND RARE SCOTTISH LICHENS.

By JAMES STIRTON, M.D., F.L.S.

THIS year's excursions to our Highland mountains have revealed many interesting lichens, and notably that to Rannoch, in company of the Rev. J. Stevenson, Dr Buchanan White, and Dr Carrington. Besides those of which descriptions are given below, many others were found in Rannoch, as—

- Bæomyces roseus* (Pers.)
- Parmelia Mougeotii* (Schær.)
- Normandina latevirens* (Turn.)
- Lecidea lugubris* (Smrf.)
- Lecidea leucophæa* (Flk.)
- Lecidea Pilati* (Hepp.)
- Lecidea auriculata* (Th. Fr.)=
- Lecidea sarcogyniza* (Nyl.), &c. &c.

By the way, I find *L. auriculata* very common on all our mountains, ascending however to no great elevation.

PARMELIA PLACORODIA (Ach.), 'Nyl. Scand.,' p. 106; = *Cetraria aleurites* (Ach.), 'Fr. Scand.,' p. 109; near Inveroran: barren.

LECANORA EXOMILA, sp. n.

Thallus obscure cinerascens, vel etiam nigrescens, hinc inde squamulosus rugulosus (an proprius?); apothecia adpressa, fusca vel fusco-nigra, plana (latit. 5-1 mm.), margine prominulo crenato vel, in junioribus, striatim rugosulo, cærulescente vel pallide cærulescente cincta; sporæ 8næ incolores ellipsoideæ, sim-

plices sæpe binucleatæ, .009— .011 × .0065— .008 mm.; paraphyses graciles, non bene discretæ apicibus fusciscentibus conglutinatis; hypothecium incolor. Iodo gel. hym. cærulescens (saltem leviter) dein fulvescens.

Saxicola (Glas Miel).

It is questionable whether the thallus is proper to this curious and singular *Lecanora*, as *Lecidea aromatica* is seen (in juxtaposition) on the same fragment of stone, and having a thallus of a corresponding character. In every instance the margin is truly cærulescent.

LECIDEA PROSTRATULA, sp. n.

Thallus pallidus vel pallide cinereus, tenuis, squamulosus, squamulis adpressis planis dispersis vel contiguis margine interdum crenulatis, hypothallo nigro insitis (K—C erythrinosis); apothecia nigra sessilia (latit. circiter .6 mm.), plana marginata dein convexula et fere immarginata; sporæ incolores, ellipsoideæ simplices, .009— .012 × .005— .006 mm.; paraphyses nonnihil irregulares, mediocres, distinctæ apicibus nigris clavatis conglutinatis; hypothecium fusco-nigrum. Iodo gel. hym. leviter cærulescens dein vinose rubens.

Saxicola apud Craig Var (Kinloch-Rannoch).

LECIDEA FILAMENTOSA, sp. n.

Thallus albidus vel pallidus rugosulus, interdum dispersim areolatus; apothecia parva (latit. .2— .4 mm.), fusco-nigra, plana acute marginata, demum convexula et vix marginatula; sporæ 8næ incolores simplices, oblongæ vel oblongo-ellipsoideæ, .011— .016 × .005— .006 mm.; paraphyses graciles irregulares non bene discretæ, apicibus sordide fusciscentibus; hypothecium incolor. Iodo gel. hym. cærulescens dein lutescens.

Ad lignum cæsum vel fabrefactum prope Killin.

K renders the paraphyses distinct as divaricato-ramose threads.

LECIDEA SANGUINARIA (L.), * SUBSANGUINARIA.

Similis L. sanguinarie sed thallo intus toto continue vel hinc inde segregatim rubricoso. Thecæ monosporæ vel interdum 2-sporæ, .07— .12 × .032— .054 mm.

Corticola prope Kinloch-Rannoch. Thallus extus K—C—.

LECIDEA HYPOCYANEA, sp. n.

Thallus pallidus vel pallide cinereus rugulosus, squamuloso-congestus; apothecia fusca vel fusco-nigra parva (latit. .2—4 mm.), convexa immarginata, sæpissime aggregata vel congesta (12—30 in quovis glomerulo); sporæ 8næ in thecis saccatis, ellipsoideæ simplices, .009— .012 × .006— .007 mm.; paraphyses non discretæ conglutinatæ apicibus concoloribus non clavatis non inspersis, hypothecium rufum; stratum subhymeniale cærulescens vel intense cærulescens crassiusculum.

Ad terram basi Ben Lawers.

The blue stratum above the hypothecium disappears here and there, and nitric acid applied gives at first a violaceous tint, which ultimately vanishes. The hymeneal gelatine is rendered blue, then opaque, by Iodine.

LECIDEA RECENSA, sp. n.

Thallus albus vel albidus convexo-areolatus (areolis appositis vel dispersis); apothecia sessilia nigra plana nigro-marginata (marginē plerumque undulato) parva, sæpissime aggregata; sporæ 8næ incolores simplices oblongæ curvatæ vel arcuatæ, .01 - .014 × .0035 - .0045 mm.; paraphyses nonnihil irregulares crassiusculæ apicibus clavatulis fuscis; hypothecium incolor. Iodo gel. hym. cærulescens (saltem leviter).

Saxicola (Craig Var).

This may be a form of *L. rivulosa*, but the spores are thinner and more curved, the apothecia black, and thallus white, &c.

LECIDEA AMPHIPLECTA, sp. nov.

Similis L. furvellæ (Nyl.), sed hypothecio incolore et iodo gel. hym. obsolete cærulescente dein vinose rubente vel interdum vinose rubescente. Paraphyses confertæ et quasi reticulatæ, epithecium crassum fusco-nigrum conglutinatum.

Saxicola (Ben Lawers).

K renders the paraphyses more distinct, when they are seen as irregular, disjointed, or nearly moniliform threads.

LECIDEA MERSATA, sp. n.

Thallus pallidus vel pallide glaucescens interdum rufo-ferrugineus, tenuis fere continuus lævigatus, hinc inde rimuloso-areolatus (K-C-); apothecia adnata nigra majuscula plana anguste marginata, demum convexula et fere immarginata, intus cærulescentia præsertim supra; sporæ incolores, simplices, ellipsoideæ vel sæpius fusiformi-ellipsoideæ, .022 - .036 × .008 - .011 mm.; paraphyses distinctæ filiformes, crassæ (crasit. .0025 - .003 mm.), apicibus late cærulescentibus, vix clavatulis, discretis; hypothecium crassum fusco-nigrum. Iodo gel. hym. intense cærulescens, thecæ interdum fulvescentes.

Ad saxa submersa lacus Rannoch.

Affinis *L. cyanophthalmæ* (Nyl.)

LECIDEA DASÆA, sp. n.

Thallus fuscus vel fusco-niger, laxè adhærens, mollis, granulato-furfuraceus vel isidioideus, diffracto-areolatus fere sicut in L. furvella (Nyl.), sed nonnihil tenuior et magis dispersus; apothecia fusco-nigra vel nigra parva (latit. .2 - .3 mm.), concaviuscula, acute marginata demum planiuscula marginē depressulo, intus rufo-fuscescentia; sporæ 8næ incolores sphericæ simplices sæpe nucleatæ, diam. .0035 - .0045 mm.; paraphyses irregulares non distinctæ apicibus concoloribus non clavatis; hypothecium obscurius vel rufo-fuscum. Iodo gel. hym. non mutata.

Ad lignum cæsum prope Ben Lawers.

Affinis *L. antilogæ* (Strn.)

LÈCIDEA ILYOPHORA, sp. n.

Thallus niger nonnihil gelatinosus tenuis; apothecia nigra parva (latit. .2— .4 mm.), convexa immarginata demum hemisphærica, rugosula, intus tota violacea sicut in Lecanora atra, K cærulescenti-virescentia; sporæ 8næ incolores obovatæ—i.e., uno apice acutiores, interdum curvulæ, 1—3—septatæ, .014— .02 × .004— .005 mm.; paraphyses non distinctæ nonnihil irregulares; hypothecium concolor. Iodo gel. hym. sordide cærulescens.

Ad lignum putrescens (Kinloch-Rannoch).

Affinis *L. melænæ* (Nyl.), sed distincta præsertim hypothecio, colore interno, &c.

LECIDEA ARCEUTINA f. DEMINUTA (Fr.), v. 'Fr. Scand.,' p. 353.

Sporæ vix septatæ, .045—.06 × .001—.0015 mm.

Ad corticem quercus prope Forres.

VERRUCARIA EXPLICATA, sp. n.

Thallus pallidus vel pallide cinereus, tenuis, sæpe dispersus; apothecia nigra prominula (latit. .2—.35 mm.), perithecio intègre nigro; sporæ (4-8)næ incolores, ellipsoideæ vel oblongo-ellipsoideæ, interdum gibbosulæ, 1-septatæ, .024—.034 × .01—.013 mm.; paraphyses nullæ. Iodo gel. hym. vinose rubens.

Supra saxa schistosa summo cacumine Ben Lawers.

This may be *V. subrimulata* (Nyl.), but the description given in 'Flora,' 1874, p. 316, is defective, inasmuch as no mention is made as to whether paraphyses are present or not, and the reactions by Iodine on the hymeneal gelatine are not stated.

VERRUCARIA ADDUBITANS, sp. n.

Thallus albidus, vix ullus visibilis; apothecia nigra majuscula (latit. .8—1.4 mm.), prominula rotundata vel sæpius oblonga, perithecio dimidiatim nigro; sporæ (4-8)næ incolores ellipsoideæ dein fuscæ, 3-5 septatæ (septis transversis, aliis irregularibus vel longitudinalibus junctis), interdum grosse granulosa, .019—.025 × .009—.012 mm.; paraphyses longæ confertæ granuloso-inspersæ, tubulares et protoplasmate interruptim disposito repletæ. Iodo gel. hym. non tincta.

Ad lignum decorticatum prope Kinloch-Rannoch.

ENDOCOCCUS EXORIENS, sp. n.

Parasiticus in thallo cujusdam Pannariæ verisimiliter P. brunneæ. Apothecia semi-immersa parva fusco vel fusco-nigra perithecio integro vel fere integro; sporæ 8næ fuscæ ellipsoideæ, 3-septatæ, .009—.011 × .006 mm.; paraphyses nullæ. Iodo gel. hym. vinose rubescens.

Craig Var prope Kinloch-Rannoch.

I am not quite certain whether the perithecium is entire, and I hesitate to dissect one of the two apothecia left for the purpose of determining this point.

EFFECTS OF THE PAST WINTER AND PRESENT SUMMER ON HARD-WOODED PLANTS.

BY COLONEL H. M. DRUMMOND HAY, C.M.Z.S.

(Continued from p. 167.)

CAUCASUS AND EASTERN PARTS OF THE BLACK SEA.

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|-----------------------------------|---|---|---|
| 58. <i>Abies orientalis</i> , | . | . | Uninjured. |
| 59. <i>Cerasus angustifolia</i> , | . | } | Some of the leaves on the unripened shoots slightly browned, but proved quite as hardy, if not more so, than the common laurel. |
| ,, <i>caucasica</i> , | . | | |
| 60. <i>Picea Nordmanniana</i> , | . | . | Uninjured. |

CANADA AND NORTH ATLANTIC AMERICAN STATES, INCLUDING * VIRGINIA AND † CAROLINA.

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|--------------------------------------|---|---|---|
| 61. <i>Acer negundo variegata</i> , | . | } | Uninjured. |
| 62. <i>Æsculus rubicunda</i> , | . | | |
| 63. <i>Amelanchier botryapium</i> , | . | | |
| 64. <i>Amygdalus nanus</i> , | . | | |
| 65. <i>Andromeda angustifolia</i> , | . | | |
| ,, <i>axillaris</i> , | . | | |
| ,, <i>calyculata</i> , | . | } | Unripened shoots killed, and much retarded. |
| ,, <i>dealbata</i> , | . | | |
| ,, <i>floribunda</i> , | . | | |
| ,, <i>rosmarinifolia</i> | . | | |
| 66. † <i>Calycanthus floridus</i> , | . | | |
| 67. <i>Catalpa syringæfolia</i> , | . | } | Top shoots killed, and slightly injured; has stood previous seasons well. |
| 68. <i>Ceanothus americanus</i> , | . | | |
| 69. <i>Cotoneaster canadensis</i> , | . | } | Uninjured. |
| 70. <i>Gaultheria procumbens</i> , | . | | |
| ,, <i>shallon</i> , | . | | |
| 71. <i>Gleditschia triacanthus</i> , | . | } | A good deal retarded, otherwise uninjured; has made good growth. |
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